

Amendment and Response

Applicant: Philip K. Zeitlow

Serial No.: 09/887,702

Filed: March 1, 2001

Docket No.: 5183USA D1

Title: METHOD AND APPARATUS FOR PROCESSING AN AERATED CONFECTIONARY FOAM ROPE

IN THE CLAIMS

Please amend claims 28, 36 and 39 as follows:

1.(Canceled) A method of processing at least one rope of aerated confectionery foam, the method comprising:

extruding at least one rope of aerated confectionery foam from an extruder;
conveying the rope from the extruder to a rotary cutter;
applying an anti-sticking agent to the rope as the rope is conveyed from the extruder to the rotary cutter; and
cutting the rope into pieces with the rotary cutter.

2.(Canceled) The method of claim 1, wherein the rope is conveyed from the extruder to the rotary cutter over a residence time period of less than 60 seconds.

3.(Canceled) The method of claim 2, wherein the residence time period is less than 25 seconds.

4.(Canceled) The method of claim 3, wherein the residence time period is approximately 22 seconds.

5.(Canceled) The method of claim 1, wherein the anti-sticking agent is powdered starch.

6.(Canceled) The method of claim 5, wherein applying the powdered starch includes distributing 20-25 pounds of powdered starch per minute for a single rope of aerated confectionery foam.

7.(Canceled) The method of claim 1, wherein conveying the rope includes conveying the rope at a speed of at least 100 feet per minute.

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8.(Canceled) The method of claim 1, wherein cutting the rope includes operating the rotary cutter to perform at least 5,000 cuts per minute.

9.(Canceled) The method of claim 8, wherein the rotary cutter includes eight blades secured about a perimeter of a support plate, and further wherein operating the rotary cutter includes rotating the support plate at a speed of 625 rpm.

10.(Canceled) The method of claim 1, further comprising:

engaging the rope between a drive roller and a conveyor proximate the rotary cutter.

11.(Canceled) The method of claim 10, further comprising:

operating the drive roller at a rotational speed corresponding with a feed rate of the conveyor.

12.(Canceled) The method of claim 1, wherein cutting the rope with the rotary cutter includes forming pieces having a thickness of less than 0.125 inch.

13.(Canceled) The method of claim 1, wherein cutting the rope with the rotary cutter includes forming pieces having a length:thickness aspect ratio in the range 32:5-48:5.

14.(Canceled) The method of claim 1, wherein extruding the rope includes forming a plastic extrudate.

15.(Canceled) The method of claim 1, wherein extruding the rope includes forming a heated extrudate.

16.(Canceled) The method of claim 1, wherein extruding the rope includes forming a deformable extrudate.

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17.(Original) A system for processing at least one rope of aerated confectionery foam, the system comprising:

an extruder configured to extrude at least one rope of aerated confectionery foam;

a conveyor for conveying the rope from the extruder, the conveyor terminating in a leading end; and

a rotary cutter positioned proximate the leading end of the conveyor, the rotary cutting being configured to cut the rope into pieces at a rate of at least 5,000 cuts per minute during a cutting operation.

18.(Original) The system of claim 17, further comprising:

an anvil support bar positioned between the leading end of the conveyor and the rotary cutter, the anvil support bar configured to maintain the rope during the cutting operation.

19.(Original) The system of claim 18, wherein the anvil support bar is an elongated body including a top wall for receiving the rope, a bottom wall, and first and second opposing side walls extending between the bottom and top walls, the anvil support bar being positioned such that the first side wall is adjacent the leading end of the conveyor and the second side wall is adjacent the rotary cutter.

20.(Original) The system of claim 19, wherein the first side wall is concave to provide clearance for the leading end of the conveyor.

21.(Original) The system of claim 19, wherein the second side wall is configured to provide a guide surface for directing a piece cut from the rope away from the rope.

22.(Original) The system of claim 21, wherein the guide surface is recessed relative to a remainder of the second side wall.

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23.(Original) The system of claim 19, wherein the anvil cutter bar is positioned such that a corner formed by the top wall and the second side wall is spaced approximately 0.005 inch from the rotary cutter.

24.(Original) The system of claim 17, further comprising:

a drive roller located above the leading end of the conveyor, the drive roller and the conveyor forming a gap sized to engage the rope.

25.(Original) The system of claim 24, wherein a height of the gap is variable.

26.(Original) The system of claim 24, wherein the drive roller and the conveyor act in concert to direct the rope to the rotary cutter.

27.(Original) The system of claim 26, further including:

a timing mechanism for correlating a speed of the conveyor with a speed of the drive roller.

28.(Currently Amended) The system of claim 17, further comprising:

a starch depositor located between the extruder and the rotary cutter for applying powdered starch to the rope.

29.(Original) The system of claim 28, further comprising a shroud surrounding the rotary cutter for capturing starch dust generated during a cutting operation.

30.(Original) The system of claim 29, further comprising a vacuum source fluidly connected to the shroud for creating a negative pressure within the shroud.

31.(Original) The system of claim 17, wherein the rotary cutter includes a plurality of elongated blades equidistantly spaced along a perimeter of at least one housing plate.

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32.(Original) The system of claim 31, wherein the rotary cutter includes 8 blades.

33.(Original) The system of claim 31, wherein each of the plurality of blades include a material face, a rake face and a guide face, the material face and the rake face combining to define a cutting angle in the range of approximately 25°-45°.

34.(Original) The system of claim 33, wherein the cutting angle is approximately 35°.

35.(Original) The system of claim 33, wherein each of the plurality of blades are secured to the at least one housing plate such that the material face is substantially perpendicular to the rope during the cutting operation.

36.(Currently amended) A mass produced marbit flake mass produced by the system of claim 17, the marbit flake comprised of an aerated confectionery foam and having a thickness of less than 0.125 inch.

37.(Original) The marbit flake of claim 36 having a thickness of approximately 0.0625 inch.

38.(Original) The marbit flake of claim 36, wherein the marbit flake has a shaped periphery.

39.(Currently amended) A mass produced marbit flake mass produced by the system of claim 17, the marbit flake comprised of an aerated confectionery foam and having a length:thickness aspect ratio in the range of approximately 32:5-48:5.

40.(Original) The marbit flake of claim 39, wherein the marbit flake has a shaped periphery.